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United States Patent [19]**Hedley et al.****[11] Patent Number:** **5,783,567****[45] Date of Patent:** **Jul. 21, 1998****[54] MICROPARTICLES FOR DELIVERY OF NUCLEIC ACID**

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[58] Field of Search 514/44; 435/320.1; 536/23.1

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[57] ABSTRACT

Disclosed is a preparation of microparticles made up of a polymeric matrix and a nucleic acid expression vector. The polymeric matrix includes one or more synthetic polymers having a solubility in water of less than about 1 mg/l. At least 90% of the microparticles have a diameter less than about 100 microns. The nucleic acid is either RNA, at least 50% of which is in the form of closed circles, or circular DNA plasmid molecules, at least 50% of which are supercoiled.

32 Claims, 9 Drawing Sheets